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| 10/827,196 | 04/19/2004 | Chun-Huang Lin | 92,000-023 (PA-1009US) | 2332 |

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| EXAMINER | |
|---|---|
| ABDULSELAM, ABBAS I | |
| **ART UNIT** | **PAPER NUMBER** |
| 2629 | |

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
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| 3 MONTHS | 04/13/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/827,196 | LIN ET AL. | |
| | Examiner | Art Unit | |
| | Abbas I. Abdulselam | 2629 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *05 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7,8 and 10-17* is/are rejected.

7)☒ Claim(s) *6,9 and 18-20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/30/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Objections*

1. Claims 8 and 18 are objected to because of the following informalities: phrases, "a fourth value" and "a sixth value" should read as "a fourth preset value" and "a sixth preset value" respectively. Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 8 recites "....the accumulated value is output to the processing device for smoothing the locus the pointer on the display device and the reset procedure is executed to reset the accumulated value. It is unclear how the limitation cited above further limits claims 8 since the same limitation is cited in an independent claim 1 on which claim 8 depends.

Claims 9-10 are rejected by the virtue of their dependencies on claim 8.

### *Claim Rejections - 35 USC § 103*

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-5, 7-8, 10-15 and 17 rejected under 35 U.S.C. 103(a) as being unpatentable over Lauffenburger et al. (USPN 7161585) in view of Kemper et al. (USPN 6509889).

Regarding claim 1, Lauffenburger et al. (hereinafter = "Lauffenburger") (USPN 7161585) teaches a pointing device *(col. 3, lines 7-11, an optical pointing device)* comprising: a locus processing circuit *(Fig. 1 (2))* receiving a digitized displacement and executing an accumulation procedure to generate an accumulated value of displacement *(col. 6, lines 20-28, FIG. 2 (20,21, 22), Post processing unit (2) includes accumulation unit 20, which in turn includes at least a first accumulator 21 for accumulating motion reports representative of displacement detected along the x axis and at least a second accumulator 22 for accumulating motion reports representative of displacement detected along the y axis.)*; wherein when the accumulated value satisfies a preset condition *(col. 6, lines 53-58, The outputs of both accumulators 21, 22 are coupled to an output conversion unit 25, the essential purpose of which is to convert the accumulated counts to counts expressing the corresponding magnitude of displacement at* ***the selected reporting resolution*** *(e.g. 400 cpi or 800 cpi)*, the accumulated value is output to a processing device *(col. 7, lines 44-45, X/Y report counts are reported to the PC or external controller)* and a reset procedure is executed to reset the

accumulated value *(col. 7, lines 18-20, col. 7, lines 46-49, the accumulators (21, 22) may be reset after a motion report has been outputted by unit 2).*

*Lauffenburger teaches a pointing device, whose motion reports are converted and outputted to PC or external controller (col. 3, lines 7-9, col. 7, lines 44-45).*

*Note that Lauffenburger's PC to which motion reports are converted and outputted is already equipped with a display and pointer on a display.*

Lauffenburger does not specifically teach a pointing device with al locus smoothing function such that a processing device is for smoothing a locus of a pointer on a display device.

*Kemper et al on the other hand teach a process for smoothing a mouse pointer track on a screen (col. 3, lines 19-24), as shown in Fig. 3 with a pointing device such as a mouse (301) used for smoothing which is done through selection of an appropriate algorithm (303) followed by application of movement smoothing correction (305) (col. 5, lines 46-51, col. 6, lines 3-7 and col. 6, lines 57-63).*

*Hence, it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lauffenburger's X/Y report counts from an optical pointing device shown in Fig. 1 with an application of movement smoothing correction (305) as configured in Fig. 3, because the use of an application of movement smoothing correction (305) enables a mouse to control the movement of screen pointer more effectively as taught by Kemper (col. 5, lines 46-49, col. 6, lines 60-63).*

Regarding claim 11, Lauffenburger teaches a pointing device *(col. 3, lines 7-11, an optical pointing device)*, comprising the steps of: receiving a digitized displacement and executing an accumulation procedure to generate an accumulated value of displacement *(col. 6, lines 20-28, FIG. 2 (20,21, 22), Post processing unit (2) includes accumulation unit 20, which in turn includes at least a first accumulator 21 for accumulating motion reports representative of displacement detected along the x axis and at least a second accumulator 22 for accumulating motion reports representative of displacement detected along the y axis.)*; and determining whether the accumulated value satisfies a preset condition *(col. 6, lines 53-58, The outputs of both accumulators 21, 22 are coupled to an output conversion unit 25, the essential purpose of which is to convert the accumulated counts to counts expressing the corresponding magnitude of displacement at* ***the selected reporting resolution*** *(e.g. 400 cpi or 800*

*cpi))*, if so, the accumulated value is output to a processing device *(col. 7, lines 44-45, X/Y report counts are reported to the PC or external controller)* and a reset procedure is executed to reset the accumulated value *(col. 7, lines 18-20, col. 7, lines 46-49, the accumulators (21, 22) may be reset after a motion report has been outputted by unit 2)*.

*Lauffenburger teaches a pointing device, whose motion reports are converted and outputted to PC or external controller (col. 3, lines 7-9, col. 7, lines 44-45).*

*Note that Lauffenburger's PC to which motion reports are converted and outputted is already equipped with a display and pointer on a display.*

Lauffenburger does not teach a locus smoothing method appropriate for a pointing device such that a processing device is for smoothing a locus of a pointer on a display device.

*Kemper et al on the other hand teach a process for smoothing a mouse pointer track on a screen (col. 3, lines 19-24), as shown in Fig. 3 with a pointing device such as a mouse (301) used for smoothing which is done through selection of an appropriate algorithm (303) followed by application*

*of movement smoothing correction (305) (col. 5, lines 46-51, col. 6, lines 3-7 and col. 6, lines 57-63).*

*It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lauffenburger's X/Y report counts from an optical pointing device shown in Fig. 1 with an application of movement smoothing correction (305) as configured in Fig. 3, because the use of an application of movement smoothing correction (305) enables a mouse to control the movement of screen pointer more effectively as taught by Kemper (col. 5, lines 46-49, col. 6, lines 60-63).*

Regarding claims 2 and 12, Lauffenburger teaches an optical mouse *(col. 3, lines 7-11, an optical pointing device, col. 1, lines 20-21, an optical pointing device in a form of a mouse is known).*

Regarding claims 3 and 13, Lauffenburger teaches the preset condition comprises the accumulated value located within a preset range of a coordinate space having at least two dimensions *(col. 6, lines, 55-57, col. 6, lines 23-28, accumulated counts in terms of magnitude of displacement at the selected reporting resolution, the accumulators (21, 22) accumulating motion reports representative of displacement detected along the x axis along the y axis).*

Regarding claims 4 and 14, Lauffenburger teaches the digitized displacement comprises a plurality of directional displacements having at least a first directional displacement *(col. 6, reports representative of displacement detected along an X axis)* and a second directional displacement *(col. 6, lines 26-28, reports representative of displacement detected along a Y axis)*, the accumulated value comprises a plurality of directional accumulated values having at least a first directional accumulated value *(col. 6, lines 24-26, at least a first a first accumulator (21) for accumulating motion reports representative of displacement detected along an X axis and col. 6, lines 40-41, counts accumulated in an accumulator (21))* and a second directional accumulated value *(col. 6, lines 26-28, at least a second accumulator (22) for accumulating motion reports representative of displacement detected along a Y axis, col. 6, lines 40-41, counts accumulated in an accumulator (22),* and the accumulation procedure accumulates the first directional displacement to yield the first directional accumulated value *(col. 6, lines 25-28, col. 6, lines 40-41, displacement detected along the X axis corresponds to counts accumulated in the accumulator (21))*, and the second directional displacement to yield the second directional accumulated value *(col. 6, lines 25-28, col. 6, lines 40-41, displacement detected along the Y axis corresponds to counts accumulated in the accumulator (22)).*

Regarding claims 5 and 15, Lauffenburger does not teach the preset condition requires that the first directional accumulated value *(col. 6, lines 53-57, col. 6, lines 65-67, a resolution corresponding to an accumulated counts from an accumulator (21), or detection resolution is 32512 cpi)* is not equal to a first preset value *(col. 6, lines 65-67, a reporting resolution of 800 cpi)* and the second directional accumulated value *(col. 6, lines 43-45, col. 6, lines 53-56, col. 6, lines 65-67, a resolution corresponding to an accumulated counts from an accumulator (22), or detection resolution is 32512 cpi)* is not equal to a second preset value *(col. 6, line 57, col. 7, line 9, reporting resolution of 400 cpi)*.

Regarding claim 8, Lauffenburger teaches the preset condition requires that the first directional accumulated value *(col. 6, lines 53-57, col. 6, lines 65-67, a resolution corresponding to an accumulated counts from an accumulator (21), or detection resolution is 32512 cpi)* is not equal to a first preset value *(col. 6, lines 65-67, a reporting resolution of 800 cpi)*, the second directional accumulated value *(col. 6, lines 43-45, col. 6, lines 53-56, col. 6, lines 65-67, a resolution corresponding to an accumulated counts from an accumulator (22), or detection resolution is 32512 cpi)* is not equal to a second preset value *(col. 6, line 57, col. 7, line 9, reporting resolution of 400 cpi)*, and the first directional accumulated value is greater *(col. 6, lines 53-57, col. 6, lines 65-67, a resolution*

*corresponding to an accumulated counts from an accumulator (21), or detection resolution is 32512 cpi)* greater than a third preset value *(col. 6, lines 56-57,col. 8, lines 64-66, selected resolution could vary)*or the second directional accumulated value is greater than a fourth value, wherein when the first directional accumulated value*(col. 6, lines 53-57, col. 6, lines 65-67, a resolution corresponding to an accumulated counts from an accumulator (21), or detection resolution is 32512 cpi)* is greater than a fifth preset value *(col. 6, lines 56-57,col. 8, lines 64-66, selected resolution could vary)* or the second directional accumulated value is greater than a sixth value, the accumulated value is output to a processing device *(col. 7, lines 44-45, X/Y report counts are reported to the PC or external controller)* for smoothing the locus of the pointer on the display device and the reset procedure is executed to reset the accumulated value*(col. 7, lines 18-20, col. 7, lines 46-49, the accumulators (21, 22) may be reset after a motion report has been outputted by unit 2)*.

*Lauffenburger teaches a pointing device, whose motion reports are converted and outputted to PC or external controller (col. 3, lines 7-9, col. 7, lines 44-45).*

*Note that Lauffenburger's PC to which motion reports are converted and outputted is already equipped with a display and pointer on a display.*

Lauffenburger does not specifically teach a processing device for smoothing a locus of a pointer on a display device.

However, as mention above as rationalized with respect to independent claims, 1 and 11,

*Kemper et al teach a process for smoothing a mouse pointer track on a screen (col. 3, lines 19-24), as shown in Fig. 3 with a pointing device such as a mouse (301) used for smoothing which is done through selection of an appropriate algorithm (303) followed by application of movement smoothing correction (305) (col. 5, lines 46-51, col. 6, lines 3-7 and col. 6, lines 57-63).*

*It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine Lauffenburger's X/Y report counts from an optical pointing device shown in Fig. 1 with an application of movement smoothing correction (305) as configured in Fig. 3, because the use of an application of movement smoothing correction (305) enables a mouse to control the movement of screen pointer more effectively as taught by Kemper (col. 5, lines 46-49, col. 6, lines 60-63).*

Regarding claims 7, 10 and 17, *while Lauffenburger teaches the accumulators (21, 22) may be rest after the corresponding report has been outputted by unit (2), preferably leaving residual count (col. 7, lines 19-29).*

Lauffenburger does not teach the reset procedure resets the first directional accumulated value to 0 and the second directional accumulated value to 0.

*It would have been obvious to one of ordinary skill in the art at the time the invention was made to recognize the alternate option of not leaving residual count for the purpose of resetting the accumulators (21, 22).*

***Allowable Subject Matter***

6. Claims 6, 9, 16 and 18-20, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

*Lauffenburger teaches the selected reporting resolution (e.g. 400 cpi or 800 cpi), and discloses that the output rate of post processing unit (2) may be adjusted as a function of the selected reporting resolution (col. 6, lines 56-57, col. 8, lines 64-66). Lauffenburger further illustrates the reporting resolution, r2 in the form of an equation in which r2 is a*

*denominator (col. 9, lines 20-30). Hence from the equation, it is clear that r2 cannot be zero.*

Regarding claims 6 and 16, Lauffenburger and Forman do not teach a pointing device with a locus smoothing function, the device including an accumulated value of displacement, the accumulated value being resettable, and satisfying a preset condition such that the accumulated value is outputted to a processing device for smoothing al locus of a pointer on a display, wherein the first preset values is zero and the second preset value is zero.

Regarding claim 9, Lauffenburger and Forman do not teach a pointing device with a locus smoothing function, the device including an accumulated value of displacement, the accumulated value being resettable, and satisfying a preset condition such that the accumulated value is outputted to a processing device for smoothing al locus of a pointer on a display, wherein the first preset values is zero, the second preset values is zero, the third preset value is two, the fourth preset value is two, the fifth preset value is 4, and the sixth preset value is four.

Regarding claim 18, Lauffenburger and Forman do not teach a pointing device with a locus smoothing function, the device including an accumulated value of displacement, the accumulated value being resettable, and satisfying a preset condition such that the accumulated value is outputted to a processing device for smoothing al locus of a pointer on a display, wherein the preset condition requires that the first directional accumulated value is not equal to a first preset value, the second directional accumulated value is not equal to a second preset value,

and the first directional accumulated value is greater than a third preset value or the second directional accumulated value is greater than a fourth value, wherein before the step of determining whether the accumulated value satisfies a preset condition, the method further comprises the step of: determining whether the first directional accumulated value is greater than a fifth preset value or the second directional accumulated value is greater than a sixth value, if so, the accumulated value is output to the processing device for smoothing the locus of the pointer on the display device and the reset procedure is executed to reset the accumulated value

***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following arts are cited for further reference.

U.S. Pat. No. 7,126,582 to Osborn teaches as shown in FIG. 1 an absolute coordinate pointer device 100 with a computer system 130 that includes a monitor or display 140, the computer system 130 using infrared, radio signals, acoustic signals, among other communications media such that output signals from the device 100 will be received as input by computer system 130 in a format compatible with signals output from a generic off-the-shelf trackball and/or mouse input (col. 4, lines 43-58).

U.S. Pat. No. 7,098,889 to Inui et al. teaches as shown in Fig. 1 an input device 10, which is intended to allow designated values for equipment control to be input properly, making it convenient for an operator to adjust designated values as desired (col. 3, lines 1-6). Inui et al. also teach output from an output unit 160 in terms of a pointer locus (610) as shown in Fig. 12

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Abbas I. Abdulselam whose telephone number is 571-272-7685. The examiner can normally be reached on Monday though Friday from 9:00 A.M. to 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on 571-272-7691. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Abbas I Abdulselam
Examiner
Art Unit 2629
March 22, 2007